

## Anders Nilsson



Anders Nilsson is a Professor of Chemical Physics at Stockholm University. He is studying the structure and dynamics of water with the goal to understand the origin of its unusual physical properties making this liquid completely unique on planet Earth. Anders Nilsson received a PhD in Physics at Uppsala University, Sweden (1989) in the laboratory created by the Nobel Laureate Kai Siegbahn. Before returning to Sweden in 2014 he was for 15 years a Professor in Photon Science at Stanford University. His research interests include x-ray spectroscopy and scattering, chemical bonding and reactions on surfaces, ultrafast science, heterogeneous catalysis, electrocatalysis in fuel cells, photocatalysis for converting sunlight to fuels, structure of water and aqueous solutions. He received the Lindbomska Award at the Swedish Royal Academy of Science, the Royal Oscar Award at Uppsala University, the Shirley Award in Berkeley, the Humboldt Award for senior scientist in Germany and was awarded Honorary Doctorate at Denmark's Technical University. His research on water was selected in 2004 by Science Magazine as one of the top ten breakthrough of the year, illustrated in 2014 as cover of Nature and selected as one of the 100 most essential discoveries in 2017 by Discovery Magazine.

## Francesco Sciortino



Francesco Sciortino is Full Professor at University di Roma "La Sapienza". Over the years, he has been interested in the thermodynamics of anomalous liquids, in the glass and gel transitions (both in atomic and in colloidal systems) and more recently in the self-assembly of patchy particles, conjugating experiments, theoretical modeling and numerical simulations. His work has been supported by an ERC Advanced grant. More detailed information on his CV and his publications are available at <https://www.roma1.infn.it/~sciortif/publications.htm>

Conference Chairs:  
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Cristina Cavinato  
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Carlo Giupponi  
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**Ca' Foscari University of Venice**  
**March 15, 2019**

**Aula A1, Edificio Delta,**  
**Campus Scientifico**  
Via Torino, Mestre

## Morning Session

08:45 Opening from the University Rector and the Conference Chairs

### Physics and chemistry of water

Chair: **Stefano Bonetti**

Stockholm University, Sweden and Ca' Foscari University of Venice, Italy

9:15 **Computational studies of the liquid-liquid transition in supercooled water**

**Francesco Sciortino,**

Sapienza University of Rome, Italy

9:55 **X-ray studies of supercooled water**

**Anders Nilsson,**

Stockholm University, Sweden

10:35 **Structural relaxation in water by inelastic scattering**

**Claudio Masciovecchio,**

FERMI-Elettra, Italy

11:15 Coffee Break

### Water as a solvent

Chair: **Achille Giacometti,**

Ca' Foscari University of Venice

11:35 **Water and proteins: disorder, order and the hydrophobic effect from a computational perspective**

**Carlo Camilloni,**

University of Milano, Italy

12:15 **Designed coiled-coil protein origami nanostructures**

**Roman Jerala,**

National Institute of Chemistry, Slovenia

13:00 Lunch Break

## Afternoon Session

14:00 **The European and Asian perspectives of spectroscopic investigations of dust from snow and deep ice cores for climatic and environmental applications**

**Augusto Marcelli**

National Institute for Nuclear Physics, Italy

14:40 **Summing up of the talks**

Organizers

15:00 **Round Table discussion**

All participants

16:30 **Closing remarks**

## Carlo Camilloni

Carlo Camilloni received his PhD in physics from the University of Milan in 2008 where he studied protein folding by means of computer simulations. From 2009 to 2015, he was Long Term FEBS Fellow, Marie Curie Fellow and postdoctoral research assistant at the Department of Chemistry of the University of Cambridge, under the supervision of Prof. Michele Vendruscolo, developing computational methods for the characterisation of protein structure and dynamics. From 2015 to 2017 he has been Mossbauer tenure track assistant professor in integrative structural biology at the Department of Chemistry and Institute for advanced science of the Technical University Munich. He is currently an Associate Professor in Applied Physics at the Department of Biosciences of the University of Milan where his research focuses on the role played by structure and dynamics in biomolecular recognition processes.



## Roman Jerala

Roman Jerala is the Head of the Department of Synthetic Biology and Immunology at the National Institute of Chemistry in Ljubljana, Slovenia. He received his PhD at the University of Ljubljana and was a postdoc at the University of Virginia. His main research current interests include signaling in innate immunity, particularly via Toll-like receptors, signaling in cancer and autoimmune diseases and synthetic biology. The main directions of his research in synthetic biology include design of bionanostructures, notably coiled-coil protein origami, which is also the topic of his ERC Advanced Grant and engineering of information processing by mammalian cells, with potential therapeutic translation. He published 10 papers in the Nature family journals, is member of the editorial board of ACS Synthetic Biology, Journal of Biological Chemistry and Innate immunity. He has been elected as EMBO member and as a member of the Academia Europaea. In the synthetic biology community, he is known as a mentor of very successful iGEM student research projects.



## Augusto Marcelli

Augusto Marcelli is a Senior Scientist at the Laboratori Nazionali di Frascati of the INFN. Since 1984 he is involved in synchrotron radiation (SR) researches. He contributed to the construction of SR beamlines at ADONE, DAFNE and ESRF. In particular, he proposed and built the first Italian Infrared/THz SR beamline and was the scientist responsible for its operation until 2006. His research areas include: correlation phenomena in XAS, circular magnetic x-ray dichroism investigations, XAS in elements of geophysical interest, dust and aerosol characterization and ultra-trace detection, FTIR microspectroscopy and imaging, time resolved concurrent experiments and SR instrumentation. He has been responsible of several experimental programs in many large scale facilities such as ALBA, Bessy, BSRF, Diamond, NSRL, PF, LURE, SSRL, SRS, UVSOR and ESRF. Since 2001 he cooperates with the Institute of High Energy Physics in Beijing and several times he has been Visiting Professor at the University of Science and Technology at Hefei. Currently, he is one of the Scientific Expert on Bilateral Policies and Activities for the Internationalization of S&T Research of the Italian Ministry of Foreign Affairs.



## Claudio Masciovecchio

Claudio Masciovecchio is the General Director of the FERMI Free Electron Laser in Trieste, Italy since 2019, having served as its Head of Scientific program in 2015 – 2018. He obtained his Ph.D. in Physics in 1998 from the University of Grenoble, and was a Postdoctoral Fellow at the European Synchrotron ESRF in Grenoble, France. From 1999 to 2015 he was a Senior Scientist at Elettra, in Trieste, Italy. His research expertise is on the dynamics of disordered systems like liquids, supercooled liquids, glasses and polymers; bio-related materials; samples in extreme thermodynamic conditions; surface science. He has led several pioneering experiments in Free Electron Laser related science in the fields of Nonlinear Optics, Four Wave Mixing, and Coherent Diffraction Imaging. He has published more than 200 papers in peer-reviewed journals and given more than 100 invited talks and plenary lectures at International Congresses, Conferences, Symposia and Workshops. In recognition of his pioneering work at large scale x-ray facilities, he was awarded the Kai Siegbahn Prize in 2012 in Uppsala, Sweden, the Innovation Award on Synchrotron Radiation in 2015 in Berlin, Germany and the Bruker-SILS Outstanding Scientist Award in 2016 in Bari, Italy.

